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AUTHOR Smith, James C., Jr.; Crittenden, William B.
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ABSTRACT

This document describes a project designed to test the effectiveness of an elementary school music curriculum guide that contained behavioral objectives and structural sequencing compared to a "traditional" guide. More than 3200 5th and 6th grade pupils taught by 56 teachers in the Houston, Texas, Independent School District participated in the program. A pretest-posttest research design was used to measure pupil achievement, and an instrument was designed for teacher evaluation of music curriculum guides. Results of the performance test showed that pupils using the behavioral objective-structural sequencing guide made almost twice the achievement gains during one academic year than did pupils using the traditional guide. In addition, teacher responses indicated that their perceptions of the degrees of pupil participation in "listening" and "physical movement" in the experimental model were significantly greater than those of control teachers. No differences in pupil participation in "singing" and "creative activities" were noted. Experimental teachers indicated significantly higher evaluations of and preferences for the new guide. (Author)

Final Report

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A PERFORMANCE TEST OF A CURRICULUM GUIDE USING BEHAVIORAL OBJECTIVES AND STRUCTURAL SEQUENCING

James C. Smith, Jr.
William B. Crittenden
7502 Fondren Road
Houston, Texas 77036

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U.S. DEPARTMENT OF
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A PERFORMANCE TEST OF A CURRICULUM GUIDE USING BEHAVIORAL OBJECTIVES AND STRUCTURAL SEQUENCING

Summary

This project tested the effectiveness of an elementary school music curriculum guide which contained behavioral objectives and structural sequencing compared to a "traditional" guide. More than 3200 fifth and sixth grade pupils taught by 56 teachers in the Houston (Texas) Independent School District participated in the program.

Three null hypotheses were tested.

1. Pupils taught under the experimental guide will make no greater achievement gains than pupils taught under the traditional guide.
2. Teachers will observe no greater degree of pupil participation in the experimental group than do teachers in the control group.
3. Teachers will indicate no greater preference for the experimental guide than for the traditional guide.

A pretest-posttest research design was used to measure pupil achievement, and an instrument for teacher evaluation of music curriculum guides was developed in the project to test the second and third hypotheses.

Pupils using the behavioral objective-structural sequencing guide made almost twice the achievement gains during one academic year than pupils using the traditional guide. In addition, teacher responses indicated their perceptions of degrees of pupil participation in "listening" and "physical movement" in the experimental model to be significantly greater than those of control teachers. No differences in pupil participation in "singing" and "creative activities" were noted. Experimental teachers indicated significantly higher evaluations of and preferences for the new guide.

All three null hypotheses were rejected, and the experimental guide was found to be more effective than the traditional guide. Statistical tests used were analysis of variance (4 x 2 design) and chi square.

As a consequence of this project, the Houston Independent School District is in the process of revising its elementary music curriculum guides to include behavioral objectives and structural sequencing. The Identification of Musical Behaviors Project of the Music Educators National Conference (MENC) has received important empirical support. It is recommended that other school districts begin revision of their curriculum guides using the new format.

TABLE OF CONTENTS

LIST OF TABLES

Chapter I

BACKGROUND FOR THE STUDY

Introduction

This project involved an attempt to measure the effectiveness of a public school music curriculum guide which is based upon prestated behavioral objectives and structural sequencing. A total of 56 schools and more than 3200 fifth and sixth grade children of the Houston Independent School District participated in the project. Comparisons of achievement between pupils using the experimental guide and those using the "traditional" music guide were made after a teaching interval of one academic year. A pretest-posttest research design was used. Findings showed that the pupils using the behavioral objective approach made greater gains in achievement, and that teachers preferred to use the experimental guide. As a result of this project, the curriculum guides in the Houston (Texas) Independent School District have been revised to include behavioral objectives and structural sequencing.

Statement of the Problem and Review of Literature

There exists in music education today a problem of motivation in the classroom. "For the great majority of students from the elementary grades through college, the usual classroom music has little meaning" (Fox, 1970, p. 50). The problem stems partly from an obvious lag in the use of relevant materials. A trend toward improvement in this area has recently developed. The November, 1969, issue of the Music Educators Journal was dedicated to rock music and pedagogical tools to insure its inclusion in the classroom (Fowler, 1969). Typical articles are "Rock in the Elements" by Thomas McCluskey; "Youth Music Development and Style" by Michele Brace and Steve Stoll; and "Legitimizing the Guitar in General Music" by Maurice Timmerman and Celeste Griffith.

A less dramatic aspect of the problem stems from the fact that the music program in the elementary school is generally characterized by two deficits: (1) a lack of sequencing in presenting the structural elements of music; and (2) a lack of objectives which are stated in terms of observable student behavior.

Marilyn Zimmerman has noted the lack of sequence (1970, p. 148-149).

> Music educators should organize the elementary music curriculum into a sequence of learnings based upon knowledge of the intellectual and musical capabilities of children at various ages ...
>
> Curriculum reformers stress that the structural elements and unifying concepts of music need to be translated into terms children at various age levels can understand and assimilate...

The subjective nature of music tends to cause an abundance of terms related to the aesthetic which are difficult to measure. Current curriculum guides express objectives in general terms, not in specific descriptions of terminal behaviors. For example, the Fort Worth (Texas) guide states (p. 11) the purposes of the program are enjoyment and growth in musical skills, understandings and knowledge for all children according to their varying abilities. "Materials chosen for use in the program should stimulate the aesthetic development of children, their sensitivity to beauty, and their good taste in music."

Many goals are stated in terms of teacher behavior rather than student behavior. A Cleveland (Ohio) guide yields the following objectives (p. 1):

> To suggest a simple method for determining sharp keys from key signatures through use of the keyboard.
>
> To give a better understanding of 6/8 meter.

Even those guides which state objectives in terms of student behaviors use some words which are unobservable and impossible to measure.

> He is encouraged to participate, to respond to the feeling and spirit of music so that an inner satisfaction is felt. ... Enjoy listening for the story. ... Grow in ability to recognize mood. Enjoy making up original melodies and words. (Highland Park Independent School District, p. 1)
>
> Children should:
> continue to build a repertoire of rote songs for enjoyment, for enrichment .....
> engage in attentive listening for enjoyment and enrichment. (Chicago Public Schools, p. 1)

In the spring of 1969, the Music Educators National Conference conducted pre-conference research symposia before all divisional conventions which launched the Identification of Musical Behaviors Project. Dr. Paul Lehman is current national chairman of this effort. In its present stage the project has been primarily concerned with communicating the concepts and language of the behavioral approach to music educators. The February, 1970, issue of the Music Educators Journal was devoted to papers dealing with behavior and curriculum. Representative articles are: "How Music Concepts are Developed" by Asahel D. Woodruff; "The Evolution of Musical Objectives" by Marian B. Kapfer; "Rethinking the Curriculum" by Ronald B. Thomas; and "The Psychology of Music and Music Education" by Robert L. Lathrop.

The significance for investigation of the behavioral approach has been noted by Henry S. Dyer (1968).

> It hardly seems like, after all the discussion during the last ten or fifteen years, that there is anyone even remotely connected with education who remains unaware of the importance of getting education objectives translated into observable student behavior.

Woodruff extolled the values of the behavioral objective technique, also (1969, p. 4).

> The behavioral approach has some powerful values which will become visible as we work with it. It can improve learning dramatically and guarantee transfer to life. It allows us to set up an instructional pattern which is at the same time a sound evaluation system and also an experimentation system. The three functions are all equally at home in the behavioral program.

The purpose of this study was to determine the effectiveness of a particular curriculum guide which uses structural sequencing and objectives stated in terms of observable student behavior in producing a modification of student musical behavior.

The Scope of the Study

As a result of the 1969 pre-conference in St. Louis, the Austin (Texas) Independent School District authorized the creation of a curriculum guide (Hawkins, Gaston, and Corbin, 1969) using direct sequential and behavioral approach. This guide was used as the experimental guide in this investigation because: (1) it has structural sequencing and behavioral objectives; (2) it is based on the same textbook series as the then-current Houston guide (Houston I.S.D., 1964); and (3) the goals are similar for grade levels. Differences between guides were chiefly in the statement of goals and the sequencing of materials.

The significance of this study is found in its primacy and size. Although other school districts were in the process of developing guides using the behavioral approach, this project was the first large-scale attempt in music education to compare pupil achievement under traditional and the new innovative techniques. The size of the Houston Independent School District provided a large sample of teachers and pupils and imparts to the findings justification for greater generalization.

Objectives and Hypotheses

It was the purpose of this study to determine the effectiveness of a music curriculum guide which uses behaviorally stated objectives and structural sequencing. Elementary Music, Grades I-VI (Austin I.S.D., 1969), a guide which employs the experimental factors, was compared with Music, Grades 5-6 (Houston I.S.D., 1964), the then-current guide of the H.I.S.D. which does not use the experimental factors.

The first objective of this study was to determine which guide stimulated instruction resulting in greater growth in music skills and concepts by 5th and 6th grade pupils.

The second objective was to determine which guide provided musical instruction resulting in increased participation by 5th and 6th grade pupils.

The third objective was to determine teacher preference in the format of a curriculum guide for teaching music to 5th and 6th grade pupils.

H_o1. Fifth and sixth grade pupils taught by their regular teachers using the music curriculum guide which is structurally sequenced and has goals stated in terms of observable student behaviors will make no greater gains in achievement than pupils taught under the traditional curriculum guide.

H_o2. Teachers using the experimental guide will observe no greater degree of pupil participation than teachers using the traditional guide.

H_o3. Teachers using the experimental curriculum guide will indicate no greater preference for it than teachers using the traditional guide for that manual.

Limitations

The project was limited to a measurement of growth in musical behavior skills of 3200 students and curriculum guide preferences of 42 music teachers in randomly selected 5th and 6th grade classes in 56 elementary schools in the North and South areas of the Houston (Texas) Independent School District.

Expected Outcomes and Contributions

It was expected that the experimental guide would provide a basis for instruction that resulted in greater growth in musical behavior skills of pupils and that stimulated more participation by students. It was also expected that music teachers would show greater preference for the new type of guide.

The project was expected to give support to the Identification of Musical Behaviors Project of Music Educators National Conference, to contribute a direct influence on the preparation of curriculum guides for Houston Independent School District, and to give supporting evidence of an increase in the effectiveness of musical instruction when teachers employ behavioral objectives and structural sequencing techniques.

Chapter II

METHODS

Description of Sample

Mrs. Ruth Red, co-director of the project and music supervisor for the Houston Independent School District, selected randomly 28 elementary schools in the South half of the district to serve as experimental schools and 28 from the North area of the city to serve as control schools. One class of fifth graders and one class of sixth graders from each school were selected to participate in the project. Pupils in the North area were taught using the then-current guide and composed the control group, while pupils in the South were taught using the experimental guide.

A total of 21 teachers were assigned to teach the 56 classes in the North and an equal number were assigned to the 56 classes in the South. Some teachers taught at two different schools. The pupils were taught music for two 30-minute sessions per week in both areas and throughout the 1970-71 academic year.

Irregularities in testing (e.g., such as occured when schedules caused one section of the achievement test to be omitted on either the pretest or the posttest for particular classes) and various other chance deviations in data caused the final comparisons to be made between 15 schools in the control areas and 16 schools in the experimental group. Only "matched pairs" (i.e. pupils who took both pretest and post-test) were used in the final analysis, reducing the number of pupils in both groups to approximately 1200.

In addition, teacher turnover resulted in the analysis of preference data between 19 teachers in the North and 19 in the South.

Training of Teachers

Prior to the opening of school for 1970-71, a two-day workshop was held during which training of teachers in both samples occurred. The experimental teachers were instructed in the use of the behavioral curriculum guide, and the control teachers were re-trained in using the traditional guide. Dr. James Smith directed the training of the experimental teachers, assisted by Ms. Sally Hawkins, Music teacher from Austin (Texas) and co-author of the guide being tested. Supervisors on the Houston Independent School District staff conducted the training of the teachers who were to use the regular guide in the North area schools. All teachers were informed of the goals and projected activities of the study.

Pretest

The instrument selected for measuring pupil achievement was Colwell's Elementary Music Achievement Test (1967). A description of the test and substantiating data are given in Appendix A.

Undergraduate music students at Houston Baptist College, under the direction of Dr. James Smith, the principal investigator, were trained in administering the Colwell instrument. During the period of September 23 to October 7, they went into the 56 schools participating in the project and administered the pretest to the 112 classes. Approximately 3300 pupils in grades 5 and 6 were tested.

Status Report

To assist the project staff in evaluating progress and in preparing a suitable instrument for testing pupil participation and teacher preference, a questionnaire was administered to the 21 experimental teachers in January, mid-way through the teaching interval. From the results of the survey, a status report was prepared by the staff as an evaluative device. Appendix B of this report contains a copy of the questionnaire and a table showing the results of the survey.

Development of Teacher Data Instrument

An instrument for collecting data with which to test hypotheses two and three was developed in this project. Conditions required that teachers' perceptions of degree of pupil "participation" be compared between the control and experimental samples, as well as comparisons of teacher preferences for the two curriculum guides. Since it was impossible to directly compare the two groups to each other, it was decided to develop an instrument which would be generally applicable to measuring teacher perceptions on the desired constructs for any music curriculum guide as compared to an idealized guide resident in each teacher's mind. Hence, higher scores produced on particular constructs in the guide by representative matched samples of teachers could be logically accepted as evidence of greater pupil participation and teacher preference.

The Music Teachers' Curriculum Guide Checklist (Appendix C) evolved through several phases of development. A pool of items was administered to a small sample of 13 music teachers in the Galveston (Texas) Independent School District. A senior student majoring in psychology conducted this field-testing and preliminary analysis as a major requirement for his senior seminar. The Kuder-Richardson 20 analysis procedure was used in an effort to test reliability, and the coefficient of internal consistency of the final items used in the Checklist was 0.71. This was accepted as reasonable evidence of reliability under the conditions of generality which prevailed and as a product of the conservative KR20 test.

The validity of the Checklist is based upon two supporting factors: face validity and item analysis results. Positive discriminating powers were necessary conditions for items to be included in the final instrument.

Administration of the Teacher Checklist

In May, 1971, 38 teachers (19 in each sample) were administered the Music Teacher's Curriculum Guide Checklist. Eleven of the 13 items on the Checklist were clustered and scaled, with the remaining items being analyzed as separate entities.

Observations and Field Visits During Treatment Interval

During the teaching interval, periodic on-site visits to schools were made by the principal investigator, project director, co-director of the project, and supervisory staff members. These observations had the central purpose of ascertaining that teachers in each area were following the prescribed protocol for that area. No special assistance was given to the experimental guide teachers during the treatment interval. All training was accomplished in the two-day pre-school workshop.

Posttest

Undergraduate music majors at Houston Baptist College were given some retraining in the standardization of testing procedures, and during the period between April 27 and May 8, 1971, they administered the Elementary Music Achievement Test to both pupil samples.

Data Processing and Analysis

All data from pupils and teachers was collected by June 1, 1971, and coding procedures were accomplished in the Houston Baptist College Research Center. The code book for pupil achievement results is shown in Appendix D.

The Music Teacher's Curriculum Guide Checklist data was analyzed on the Olivetti Programma 101 computer at Houston Baptist College. Chi square tests of proportionality on the responses to individual items controlling for sample type were run, and the scale totals for 11 items were compared through use of the t-test.

Keypunching of coded data on the pupil achievement tests was accomplished at the Houston Independent School District computer center. Analysis of variance, using 4x2 statistical design, controlling for grade level, sample type and repeated measures, was used as the primary statistical test on this data. The computer center at the University of Texas (Austin) provided the means of the statistical computation for this phase of the project.

All data processing was accomplished by January, 1972, and analysis and preparation of articles and reports occupied the staff for the remainder of the project.

Chapter III

RESULTS

Pupil Achievement Gains

Table I shows the mean achievement scores of pupils on the Elementary Music Achievement Test on the pretest and the posttest, and the gains made by the two samples. The results are decidedly favorable to the case for using the behavioral objective format instead of the traditional curriculum guide. Pupils in the experimental sample, though beginning at a level slightly below those in the control group, not only caught up but surpassed the control group pupils, ending with almost twice the overall mean gain. Pupils in both samples made gains which are statistically significant, while the experimental pupils' mean gain was significantly greater than that of the control pupils as well. All levels of significance are at .05 or less.

TABLE I

MEAN GAINS OF FIFTH AND SIXTH GRADE PUPILS ON ELEMENTARY MUSIC ACHIEVEMENT TEST, CONTROLLING FOR SAMPLE TYPE

	Pretest	Posttest	Gain
Experimental (N=624)	88.33	96.03	7.70
Control (N=515)	89.41	93.53	4.12

Table II shows the mean achievement gains of pupils controlling for sample type and grade level, and the results indicate that fifth graders in both samples gained more knowledge of music than did the sixth graders. In addition, fifth grade

TABLE II

MEAN GAINS OF PUPILS ON ELEMENTARY MUSIC ACHIEVEMENT TEST, CONTROLLING FOR SAMPLE TYPE AND GRADE LEVEL

	CONTROL		EXPERIMENTAL	
	5th N=257	6th N=258	5th N=337	6th N=287
PRETEST	85.41	93.40	86.37	90.63
POSTTEST	90.40	96.65	94.68	97.62
GAIN	+4.99	+3.25	+8.31	+6.99

pupils in the experimental group made statistically significant greater gains than their counterparts in the control group. The sixth graders of the experimental sample more than doubled the gains of control sixth graders. Table III depicts the results of analysis of variance test run on the total achievement of the four grade sections on pretest-posttest model.

TABLE III

ANALYSIS OF VARIANCE (4x2 DESIGN) SHOWING RESULTS OF COMPARING PUPIL SCORES ON PRETEST AND POSTTEST, CONTROLLING FOR SAMPLE TYPE AND GRADE LEVEL

Source	Mean Square	D.F.	F-Ratio	p
Total	710.8052	2277		
Between	1187.4156	1138		
*Groups	5790.9873	3	4.927	.0025
Error (G)	1175.2476	1135		
Within	234.6133	1139		
**Trials	21063.7968	1	97.974	.0000
G by T	714.0707	3	3.321	.0189
Error (T)	214.9943	1135		

*Experimental 5th, 6th; Control 5th, 6th
**Pretest, Posttest

Pupils instructed under the experimental guide made significantly greater gains in "interval discrimination" than those who worked with the traditional guide (See Table IV). The control pupils' mean gains over teaching interval were not significant (at the .05 level).

TABLE IV

MEAN GAINS OF PUPILS ON INTERVAL DISCRIMINATION, CONTROLLING FOR SAMPLE TYPE AND TEACHING INTERVAL

	PRETEST	POSTTEST	GAIN
Exp. 5th (N=257)	8.00	8.66	+0.66
Cont. 5th (N=258)	8.47	8.63	+0.16
Exp. 6th (N=337)	8.32	8.79	+0.47
Cont. 6th (N=287)	8.88	8.71	-0.17

On the construct "major-minor mode discrimination", the control 6th grade pupils regressed significantly between the pretest and posttest, causing the total experimental sample to end the training with greater skills (Table V).

TABLE V

MEAN GAINS OF PUPILS ON MAJOR-MINOR MODE DISCRIMINATION, CONTROLLING FOR SAMPLE TYPE AND TEACHING INTERVAL

	PRETEST	POSTTEST	GAIN
Exp. 5th (N=257)	10.22	10.66	+0.44
Cont. 5th (N=258)	10.04	10.66	+0.62
Exp. 6th (N=337)	10.60	11.05	+0.45
Cont. 6th (N=287)	11.05	10.15	-0.90

Very clear-cut gains in achievement by experimental pupils over control were registered in the subtest on the construct "feeling for tonal center" (See Table VI). All comparisons by analysis of variance showed the gains to be significant at the .05 level or less.

TABLE VI

MEAN GAINS OF PUPILS ON FEELING FOR TONAL CENTER, CONTROLLING FOR SAMPLE TYPE AND TEACHING INTERVAL

	PRETEST	POSTTEST	GAIN
Exp. 5th (N=257	12.86	14.28	+1.42
Cont. 5th (N=258)	12.44	12.45	+0.01
Exp. 6th (N=337)	13.14	14.38	+1.24
Cont. 6th (N=287)	13.94	13.81	-0.13

Careful analysis of results which indicated greater achievement gains for control pupils over experimental revealed that in determining "pitch" using auditory-visual techniques fifth graders surpassed their counterparts. Opposite results emerged in the case of 6th graders as experimental pupils outgained control students (See Table VII).

TABLE VII

MEAN GAINS OF PUPILS ON AUDITORY-VISUAL DISCRIMINATION (PITCH), CONTROLLING FOR SAMPLE TYPE AND TEACHING INTERVAL

	PRETEST	POSTTEST	GAIN
Exp. 5th (N=257)	7.52	8.25	+0.73
Cont. 5th (N=258)	6.01	7.61	+1.60
Exp. 6th (N=337)	7.61	9.50	+1.89
Cont. 6th (N=287)	8.73	8.74	+0.01

Mixed results were obtained when gains on "auditory-visual discrimination (rhythm)" were compared, also, but in opposite directions as 6th grade control pupils outgained their experimental counterparts (Table VIII).

TABLE VIII

MEAN GAINS OF PUPILS ON AUDITORY VISUAL DISCRIMINATION (RHYTHM), CONTROLLING FOR SAMPLE TYPE AND TEACHING INTERVAL

	PRETEST	POSTTEST	GAIN
Exp. 5th (N=257)	9.97	11.86	+1.89
Cont. 5th (N=258)	11.04	10.79	-0.25
Exp. 6th (N=337)	11.09	11.71	+0.62
Cont. 6th (N=287)	10.85	12.46	+1.61

There was no construct on which the mean gain of the total control sample was higher than that for the experimental sample.

Pupil Participation

Four test items were included on the Music Teacher's Curriculum Guide checklist which measured the teachers' perceptions of the degrees to which pupils "participated". Chi square tests of proportionality were run on responses to the four items. The results indicated that a significantly greater proportion of teachers using the experimental guide rated it effective in stimulating pupils to participate in "listening" and through "physical movement" than did the control teachers (Table IX). Stimulation to participate in "singing" and "creative activities" was perceived to be of no significant difference between teacher samples.

TABLE IX

CHI SQUARE TESTS OF PROPORTIONALITY ON ITEMS MEASURING TEACHERS' PERCEPTIONS OF PUPIL PARTICIPATION

Item	Exp. Teachers	Cont. Teachers	X^2	p
This curriculum guide stimulated pupils to participate in singing to an extent that was				
"extremely high" or "high"	5	6		
"average", "low", or "extremely low"	14	13	0.13	N.S.
This curriculum guide stimulated pupils to participate in listening to an extent that was				
"extremely high" or "high"	9	2		
"average", "low", or "extremely low"	10	17	4.38	.05
This curriculum guide stimulated pupils to participate in creative activities to an extent that was				
"extremely high" or "high"	6	2		
"average", "low", or "extremely low"	13	17	1.31	N.S.
This curriculum guide stimulated pupils to respond to music through physical movement to an extent that was				
"extremely high" or "high"	18	2		
"average", "low", or "extremely low"	1	17	20.86	.001

Teacher Preference

When asked to evaluate the curriculum guide used during the treatment interval on a scale of "excellent", "good", "average", "fair", and "poor", 18 of the 19 experimental teachers chose "excellent" or "good", compared to 4 of the 19 control teachers (See Table X). This difference in proportions was significant at the .001 level. Experimental pupils' acceptance of instruction based on their guide was rated as significantly higher than control pupils' acceptance of the traditional guide. Teachers also held the opinion that the experimental guide was more effective in producing knowledge of music theory relating to "pitch" and "rhythm" than the control guide.

TABLE X

CHI SQUARE TESTS OF PROPORTIONALITY ON ITEMS MEASURING TEACHER PREFERENCES OF CURRICULUM GUIDES

Item	Exp. Teachers	Cont. Teachers	X^2	p
My general evaluation of this curriculum guide is				
"excellent" or "good"	18	4		
"average", "fair", or "low"	1	15	21.16	.001
My pupils accepted instruction based on the music curriculum guide used this year by reacting				
"very favorably" or "favorably"	16	8		
"in a 'so what' manner", "unfavorably", or "very unfavorably"	3	11	5.73	.025
This curriculum guide was instrumental in producing in pupils a knowledge of music theory relating to pitch symbols, best described as				
"very good" or "good"	13	2		
"average", "fair", or "poor"	6	17	13.33	.001
This curriculum guide was instrumental in producing in pupils a knowledge of music theory relating to rhythm symbols. best described as				
"very good" or "good"	18	3		
"average", "fair", or "poor"	1	16	23.95	.001

There was no statistical difference between the two samples of teachers on their responses concerning the difficulty of use of the two guides, the scope of the music field covered, and the effectiveness of either guide in changing pupils' attitudes toward music.

Majorities of both samples recommended revision in the guide used by each group.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

On the basis of findings cited in Table I, null hypothesis H_o1 was rejected, and it was concluded that fifth and sixth grade pupils taught by their regular teachers using a music curriculum guide which is structurally sequenced and whose goals are stated in terms of observable student behaviors made greater gains in achievement than pupils taught using the traditional curriculum guide.

Music instruction employing relevant, popular tunes and techniques pre-occupies the attention of specialists. It has been noted particularly that 6th grade pupils seem disinterested in traditional music subject matter and methods. The results of deeper analysis of data in this project indicate that 5th graders in both samples outgained 6th graders, but that 6th graders using the experimental guide outgained their control counterparts (See Table II). Thus, it can be inferred that the behavioral objective format using current materials is more effective for 6th graders.

Further confirmation of this conclusion is found in Tables IV, VI, VII, and VIII. Mixed findings depicted in Tables VII and VIII cause some concern and create a need for more specific information relating to the comparison of aural and visual stimuli (critical listening).

Some criterion-referenced validity for the teacher checklist is implied by the similarity of results on the pupil achievement tests and the subjective perceptions of teachers relating to "pitch" (Tables IV, V, IX).

On the basis of findings cited in Table IX, null hypothesis H_o2 was rejected, and it was concluded that teachers using the experimental guide did observe a greater degree of pupil participation than teachers using the traditional guide.

On the basis of findings cited in Table X, null hypothesis H_o3 was rejected, and it was concluded that teachers using the experimental curriculum guide indicated a greater preference for it than teachers using the traditional guide for that manual.

Recommendations

It is recommended that the Houston Independent School District revise its music curriculum guides for grades 1-6 to incorporate structural sequencing and behavioral objectives.

It is recommended that further study of the findings of this project be made with the intent of identifying the strong and weak points of the experimental guide, and that the Austin Independent School District revise it in the light of findings.

It is recommended that other school districts begin to revise their music curriculum guides to incorporate the format of the experimental guide.

Further research should be initiated to determine which musical activities by students contribute to the development of critical listening skills.

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APPENDIX A

Description of

ELEMENTARY MUSIC ACHIEVEMENT TEST

ELEMENTARY MUSIC ACHIEVEMENT TEST

The Elementary Music Achievement Test was published by Follet Publishing Company in 1967. The following quotes describe its function and establish its validity and reliability.

Description:

> The Elementary Music Achievement Tests are divided into two independent tests. Test I covers the areas of pitch discrimination (skipwise and scalewise), and meter discrimination. Test II covers the areas of auditory-visual discrimination (music reading), feeling for tonal center, and major-minor mode discrimination. The information offered by EMAT is vital to diagnostic work, program planning, curriculum revision, and evaluation of objectives. EMAT does not claim to measure total musicianship, but the skills measured by EMAT are essential and without them the pupil will be lacking in musicianship and cannot be musically educated nor can he develop musical understanding.

Content Validity:

> ... it was possible to compile a list of objectives, skills and outcomes common to all elementary music texts. To be sure the similarity (between elementary music texts) was general for the entire elementary music education program, other sources of objectives were examined, such as courses of study, curriculum guides, elementary music education texts used in college courses. The same agreement on common goals continued to appear.
>
> ... The author devised a 707 item exploratory test, which was administered to 635 students in cities of various sizes in Illinois. Item analysis was computed to assist in selecting items for the next trial form of every section of the test.

Criterion Related Reliability:

> In addition to content validity, criterion related validity was also an important consideration if the test was to serve diagnostic, predictive or motivational purposes. To provide a clue as to this type of validity, teachers in every testing situation 1964-65 were asked to furnish lists of outstanding achievers and exceptionally low achievers in each class taking the test. ... To eliminate any possible contamination, teachers were not furnished test scores. Correlations between teacher selections and test scores were high for all trial versions of the test; correlations with scores on the final form of the tests were .92 (N=1893).

APPENDIX B

JANUARY STATUS REPORT

APPENDIX B

January 971

Name _____

Schools _____

_____

STATUS REPORT

1. Indicate number of last step in each sequence which you have introduced.

   R _____ M _____ H _____ F _____

2. What particular problem are you most concerned with?

   _____

   _____

   _____

3. Please rate your concept of guide effectiveness.

   ____ Excellent ____ Good ____ Adequate ____ Poor

4. Please rate student response to your teaching using guide.

   ____ Obvious Improvement in Participation

   ____ Some Improvement in Participation

   ____ No Difference

   ____ Less Participation and Response

Results of January Status Report - 21 Teachers Responding

I. Status in Sequences

A. Rhythm

step #	response
4	3
6	2
7	3
8	5
9	5
13	3
Total	21

B. Melody

step #	response
2	1
3	2
4	3
5	5
6	1
7	6
8	3
Total	21

C. Harmony

step #	response
1	2
2	4
3	3
4	1
5	1
6	1
8	1
Total	13

D. Form

step #	response
1	3
2	4
4	1
Total	8

II. Concept of Guide Effectiveness

Excellent	7
Good	11
Adequate	3
Poor	0
Total	21

III. Student Response to Guide

Obvious Improvement	5
Some Improvement	14
No Difference	2
Less Participation	0
Total	21

IV. Particular Problem

Equipment	4
Particular Step (in Guide)	3
Student Response	4
Teacher Interpretation	6
Time Conflict	2
No Response	2
Total	21

APPENDIX C

MUSIC TEACHER CURRICULUM GUIDE CHECKLIST

MUSIC TEACHER CURRICULUM GUIDE CHECKLIST

Name_____ School_____

Date_____ No. Yrs. Experience (include this year)_____

INSTRUCTIONS: This instrument is designed to assist in the evaluation of the music curriculum guides used this year. Several characteristics are described below. There are alternatives describing various possible reactions of the teacher toward each characteristic. Please check in the appropriate space the alternative best describing your reaction to each statement of a characteristic of the curriculum guide you used.

1. My pupils accepted instruction based on the music curriculum guide used this year by reacting

   _____ very favorably
   _____ favorably
   _____ in a "So what?" manner
   _____ unfavorably
   _____ very unfavorably

2. For me (the teacher), the curriculum guide used this year was

   _____ extremely easy to use
   _____ somewhat easy to use
   _____ not easy, but not hard to use
   _____ somewhat hard to use
   _____ extremely hard to use

3. This curriculum guide was instrumental in producing in pupils a degree of knowledge of music theory relating to pitch symbols, best described as

   _____ very good
   _____ good
   _____ average
   _____ fair
   _____ poor

4. This curriculum guide was instrumental in producing in pupils a degree of knowledge of music theory relating to rhythm symbols, best described as

   _____ very good
   _____ good
   _____ average
   _____ fair
   _____ poor

5. This curriculum guide stimulated the pupils to participate in singing to an extent that was

   _____ extremely high
   _____ high
   _____ average
   _____ low
   _____ extremely low

6. This curriculum guide stimulated the pupils to participate in listening to an extent that was

_____ extremely high
_____ high
_____ average
_____ low
_____ extremely low

7. This curriculum guide stimulated the pupils to participate in creative activities to an extent that was

_____ extremely high
_____ high
_____ average
_____ low
_____ extremely low

8. This curriculum guide stimulated the pupils to respond to music through physical movement to an extent that was

_____ extremely high
_____ high
_____ average
_____ low
_____ extremely low

9. This curriculum guide covered a scope in the field of music that was

_____ very comprehensive
_____ comprehensive
_____ somewhat restricted
_____ restricted
_____ very restricted

10. If answer to #9 contained the word "restricted," the guide was restricted to

_____ Theory
_____ Activities (Singing, Listening, etc.)
_____ Humanities
_____ Social Studies Oriented Units

11. The curriculum guide used this year was instrumental in effecting changes in pupil attitudes toward music, as indicated below:

_____ most pupils had greater liking for music at the end of the year than at the beginning
_____ some pupils had greater liking for music at the end of the year than at the beginning
_____ very little change in attitude was noted
_____ some pupils had less liking for music at the end of the year than at the beginning
_____ most pupils had less liking for music at the end of the year than at the beginning

12. My general evaluation of this curriculum guide is

_____ excellent
_____ good
_____ average
_____ fair
_____ poor

13. For the pupils of this Independent School District, I recommend that we

_____ continue using this music curriculum guide as it is
_____ revise the guide to make it more effective
_____ use no guide at all
_____ abandon this guide and try to find a better one

APPENDIX D

PUPIL DATA CODE BOOK

HOUSTON BAPTIST COLLEGE MUSIC EDUCATION PROJECT

CODEBOOK

DECK I

Column Number	Items
	Demographic Data
1-2	Pupil Number (00-99)
3	Grade Level: 5. Fifth grade 6. Sixth grade
4-5	School Number 01. Alcott 02. Almeda 03. Anderson 04. Bastian 05. Fairchild 06. Fannin 07. Foerster 08. Frost 09. Grimes 10. Grissom 11. Hartsfield 12. Hobby 13. Kelso 14. Law 15. Longfellow 16. MacArthur 17. MacGregor 18. Mading 19. Montgomery 20. Peterson 21. Poe 22. Red 23. Reynolds 24. Roberts 25. Shearn 26. Southland 27. Sunny Side 28. Whidby 29. Windsor Village 51. Allen 52. Barrick 53. Benbrook 54. Burbank 55. Burrus 56. Cooley 57. DeChaumes 58. Durham 59. Durkee 60. Eighth 61. Field 62. Garden Oaks 63. Harvard 64. Helms 65. Highland Heights 66. Hohl 67. Holden 68. Janowski 69. Jefferson 70. Kennedy 71. Love 72. Northline 73. Oak Forest 74. K. Smith 75. Stevens 76. Travis 77. Wesley
6	1. Pretest 2. Post-test

Column Number	Items
7	Sample Type 1. South (Experimental Sample) 2. North (Control Sample)
8	Blank
	TEST I
	Part I: Pitch Discrimination Subtest A
9-23	Items 1-15: One column allotted for each response. 1. 1 2. 2 3. S
24	Blank
	Subtest B
25-34	Items 16-25: One column allotted for each response. 1. 1 2. 2 3. S
35	Blank
	Part II: Interval Discrimination Subtest A
36-45	Items 26-35: One column allotted for each response. 1. S 2. L 3. ?
46	Blank
	Subtest B
47-64	Items 36-53: One column allotted for each response. 1. S 2. L 3. ?
65-79	Blank
80	Punch 1

DECK II

Column Number	Items
	Demographic Data
1-2	Pupil Number (00-99)
3	Grade Level: 5. Fifth grade 6. Sixth grade
4-5	School Number: (See Deck I, Columns 4-5)
6	1. Pretest 2. Post-test
7	Sample Type: 1. South (Experimental Sample) 2. North (Control Sample)
8	Blank
	Part III: Meter Discrimination
9-23	Items 54-68: One column allotted for each response. 1. 2 2. 3 3. ?
24	Blank
	TEST II
	Part I: Major-Minor Mode Discrimination Subtest A
25-39	Items 1-15: One column allotted for each response. 1. M 2. m
40	Blank
	Subtest B
41-53	Items 16-28: One column allotted for each response. 1. M 2. m 3. c
54	Blank

Column Number	Items
	Part II: Feeling for Tonal Center Subtest A
55-64	Items 29-38: One column allotted for each response. 1. 1 2. 2 3. 3 4. 0
65	Blank
	Subtest B
66-75	Items 39-48: One column allotted for each response. 1. 1 2. 2 3. 3 4. 0
76-79	Blank
80	Punch 2

DECK III

Column Number	Items
	Demographic Data
1-2	Pupil Number (00-99)
3	Grade Level: 5. Fifth grade 6. Sixth grade
4-5	School Number: (See Deck I, Columns 4-5)
6	1. Pretest 2. Post-test
7	Sample Type: 1. South (Experimental Sample) 2. North (Control Sample)
8	Blank
	Part III: Auditory-Visual Discrimination Subtest B: Pitch
9-32	Items ~~49-60~~: Two (2) columns allotted for each response. ~~49~~, ~~51~~, ~~53~~, ~~55~~, ~~57~~, ~~59~~, 50, 52, 54, 56, 58, 60 Code Response 01. 1 02. 2 03. 3 04. 4 05. 0 06. 1 and 3 07. 1 and 4 08. 2 and 3 09. 2 and 4 10. 3 and 4 11. 1 and 2 12. 1,2 and 3 13. 1,3 and 4 14. 1,2,3 and 4 15. 1,2 and 4 16. 2,3 and 4
33	Blank

Column Number	Items
	Subtest B: Rhythm
34-57	Items ~~61-72~~: Two (2) columns allotted for each response. 61, 63, 65, 67, 69, 71, 62, 64, 66, 68, 70, 72 Code Response 01. 1. 02. 2 03. 3 04. 4 05. 0 06. 1 and 3 07. 1 and 4 08. 2 and 3 09. 2 and 4 10. 3 and 4 11. 1 and 2 12. 1,2 and 3 13. 1,3 and 4 14. 1,2,3 and 4 15. 1,2 and 4 16. 2,3 and 4
58-79	Blank
80	Punch 3